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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TSUYOSHI NAKAMURA
and NOBUHITO SAJI

Appeal 2009-009197
Application 11/273,332
Technology Center 1700

Before BRADLEY R. GARRIS, CHARLES F. WARREN, and TERRY J. OWENS, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 1, 3-5, 14, and 17-19 in the Office Action mailed January 25, 2008. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2008).

We reverse the decision of the Primary Examiner.

Claims 1 and 14 illustrate Appellants' invention of a positioning apparatus, and are representative of the claims on appeal:

1. A positioning apparatus, comprising:

a box body including a process chamber exposed to a decomposition environment in the interior of the box body and an opening allowing said process chamber to communicate with an area outside of the box body;

a moving member for shielding said opening of said box body with a slight clearance between said box body and the moving member and moveable with respect to said opening of said box body;

a driving portion that moves said moving member;

a differential pumping seal for sealing said slight clearance between said opening of said box body and said moving member.

wherein on a portion of said moving member to be moved into the interior of said process chamber, when said moving member moves, there is formed a treatment surface that restricts an amount of emission gas accumulatable thereon, and

wherein a width of a portion of said box body opposed to said moving body in a moving direction of said moving member is set equal to or larger than a moving amount of said moving member.

14. A positioning apparatus, comprising:

a box body including a process chamber exposed to a decomposition environment in the interior of the box body and an opening allowing said process chamber to communicate with an area outside of the box body;

a moving member for shielding said opening of said box body with a slight clearance between said box body and the moving member and moveable with respect to said opening of said box body;

a differential pumping seal for sealing said slight clearance between said opening of said box body and said moving member,

wherein a portion of said moving member to be moved into the interior of said process chamber, when said moving member moves, is formed such that at least the surface thereof is formed of high-density ceramic material or is coated with a CVD film of SiC or DLC or a PVD film of TiN, TiC, sapphire or DLC.

Appellants request review of the grounds of rejection under 35 U.S.C. § 103(a) advanced on appeal by the Examiner: claims 1, 3-5, and 17-19 over Pollock (US 4,726,689) in view of Vanderpot (US 6,172,372 B1);[1] and claim 14 over Pollock in view of Vanderpot, further in view of Aoki (US 5,954,880).[2] App. Br. 9; Ans. 2, 3, and 4.

Opinion

I. Claim 1: Pollock

We agree with Appellants that the Examiner erred in concluding that one of ordinary skill in the art would have been led by Pollock to the claimed positioning apparatus comprising at least, among other things, as illustrated in Specification Figure 1, "the width [b] of a portion [21] of said box body [20] opposed to said moving body [30] in a moving direction of said moving member [30] is set equal to or larger than a moving amount [S] of said moving member [30]," that is, $b \geq S$, as specified in representative independent claim 1. *See* Spec. 25:13 to 26:3. Ans. 3-4 and 5; App. Br. 10; Reply Br. 2-3. The Examiner does not rely on Vanderpot with respect to this limitation.

As a matter of claim construction, in giving the claim terms thereof the broadest reasonable interpretation consistent with the Specification, we agree with Appellants that claim 1 specifies that moving amount S is the amount that moving member 30 can be moved, thus specifying a structural configuration between width b of box body 20 and moving amount S of

[1] The Examiner withdrew this ground of rejection with respect to claim 14. Ans. 2 and 3.
[2] The Examiner modified this ground of rejection by withdrawing Tanaka. Ans. 2 and 4.

moving member 30. App. Br. 7 and 10-11; Reply Brief 2-3. *See, e.g., In re Suitco Surface, Inc.*, 603 F.3d 1255, 1259 (Fed. Cir. 2010) (quoting *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (citing *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004)); *In re Morris*, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997). We determine that the corresponding clause of independent claim 17 is subject to the same interpretation.

As Appellants point out, the Examiner has not properly considered the subject limitation of claims 1 and 17 in concluding that the same is met by the fact that Pollock demonstrates the capacity to move moving member 10 "any distance desired by the operator" and thus "a distance less than the width of the box body [50]." Ans. 4 and 5, citing Pollock Fig. 1. Indeed, the subject limitation in claim 1 is a structural limitation of the claimed positioning apparatus and not a matter of operator controlling the operation of the apparatus, and we fail to find in Pollock that the moving amount of moving member 10 is structurally limited in this respect.

Accordingly, in the absence of a prima facie case of obviousness, we reverse the ground of rejection of claims 1, 3-5, and 17-19 under 35 U.S.C. § 103(a) over Pollock and Vanderpot.

II. Claim 14: Pollock and Aoki

We agree with Appellants that the Examiner erred in concluding that one of ordinary skill in the art would have been led by Pollock and Aoki to the claimed positioning apparatus comprising at least, among other things, as illustrated in Specification Figure 1, "a portion of said moving member [30] to be moved into the interior of said process chamber [P], when said moving

member [30] moves [S], is formed such that at least the surface thereof is formed of high-density ceramic material or is coated with" the coatings specified in representative claim 14. *See* Spec. 19:2-14. Ans. 4 and 5; App. Br. 13-14. The Examiner does not rely on Vanderpot with respect to this limitation.

There is no dispute that Aoki would have disclosed to one of ordinary skill in the art SiC coating 23b on the inner peripheral surface of bearing box 18b and on the outer peripheral surface of alignment ring 17 to provide smooth shifting of rolling bearing 11 caused by contraction after thermal expansion in Aoki's roller support device in a molten metal plating bath. Aoki col. 6, ll. 51-67 and Fig. 2A. Ans. 4 and 5; App. Br. 14. We further find that Pollock would have disclosed to one of ordinary skill in the art that moving member reciprocating shaft 10 is housed in linear gas bearing assembly 40 having a gas bearing and seal that "are non-contact with respect to reciprocating shaft 10 and thus provide for an essentially friction-free and noise-free linear motion vacuum feed-through" into vacuum chamber 50. In this respect, we fail to find in Pollock a teaching that a friction reducing coating on reciprocating shaft 10 is necessary to move within gas bearing assembly 40 in this manner. *See* Pollock, e.g., col. 1, l. 66 to col. 2, l. 39, and Fig. 1.

On this record, we agree with Appellants that there is no reason why one of ordinary skill in the art would have applied Aoki's SiC coating for friction reduction during contraction of bearings following thermal expansion, on the surface of Pollock's moving shaft 10 to reduce the friction thereof during passage through a bearing into vacuum chamber 50, as the

Examiner contends. This is because Aoki's SiC coating is not on a shaft that enters a process chamber. Ans. 4 and 5; App. Br. 14. We are reinforced in our view by Pollock's disclosure that reciprocating shaft 10 moves in air bearing assembly 40 in an essentially friction-free manner.

Accordingly, in the absence of a prima facie case of obviousness, we reverse the ground of rejection of claim 14 under 35 U.S.C. § 103(a) over Pollock, Vanderpot, and Aoki.

The Primary Examiner's decision is reversed.

REVERSED

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